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LAKE SIDNEY LANIER, DAWSON, FORSYTH, GWINNETT, HALL, AND LUMPKIN COUNTIES, GEORGIA

Pacific Northwest Environmental
Research Laboratory

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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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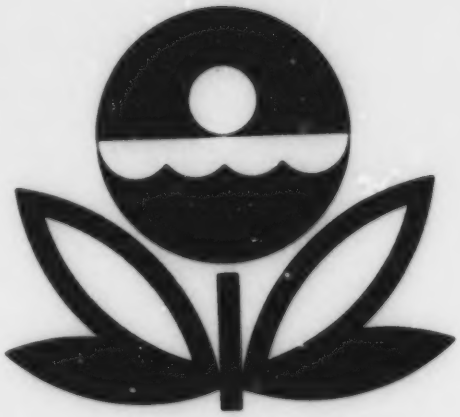

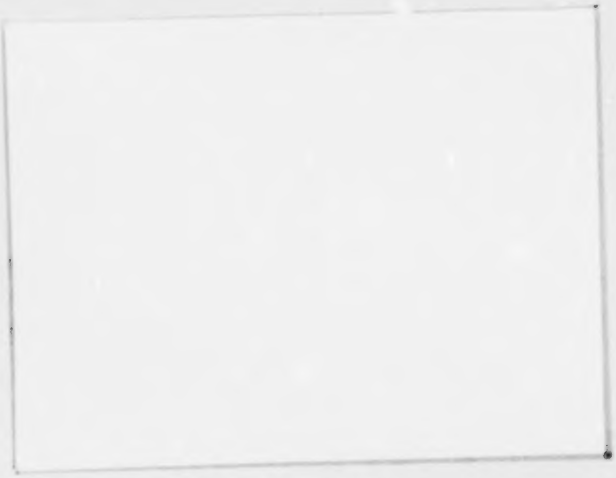

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REPORT
ON
LAKE SIDNEY LANIER
DAWSON, FORSYTH, GWINNETT,
HALL, AND LUMPKIN COUNTIES
GEORGIA

EPA REGION IV

WORKING PAPER NO. 293

WITH THE COOPERATION OF THE

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JUNE, 1975

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Georgia Department of Natural Resources for professional involvement and to the Georgia National Guard for conducting the tributary sampling phase of the Survey.

Joe D. Tanner, Commissioner of the Department of Natural Resources; J. Leonard Ledbetter, Director of the Environmental Protection Division; Ralph S. Howard, Jr., Environmental Affairs Coordinator; Gene B. Welsh, Chief of the Water Protection Branch; Edward T. Hall, Jr., Unit Coordinator; and Broughton A. Caldwell, R. Marshall Gaddis, William D. Kennedy, and Kenneth W. Martin, Environmental Specialists, provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary lake reports, and provided critiques most useful in the preparation of this Working Paper series.

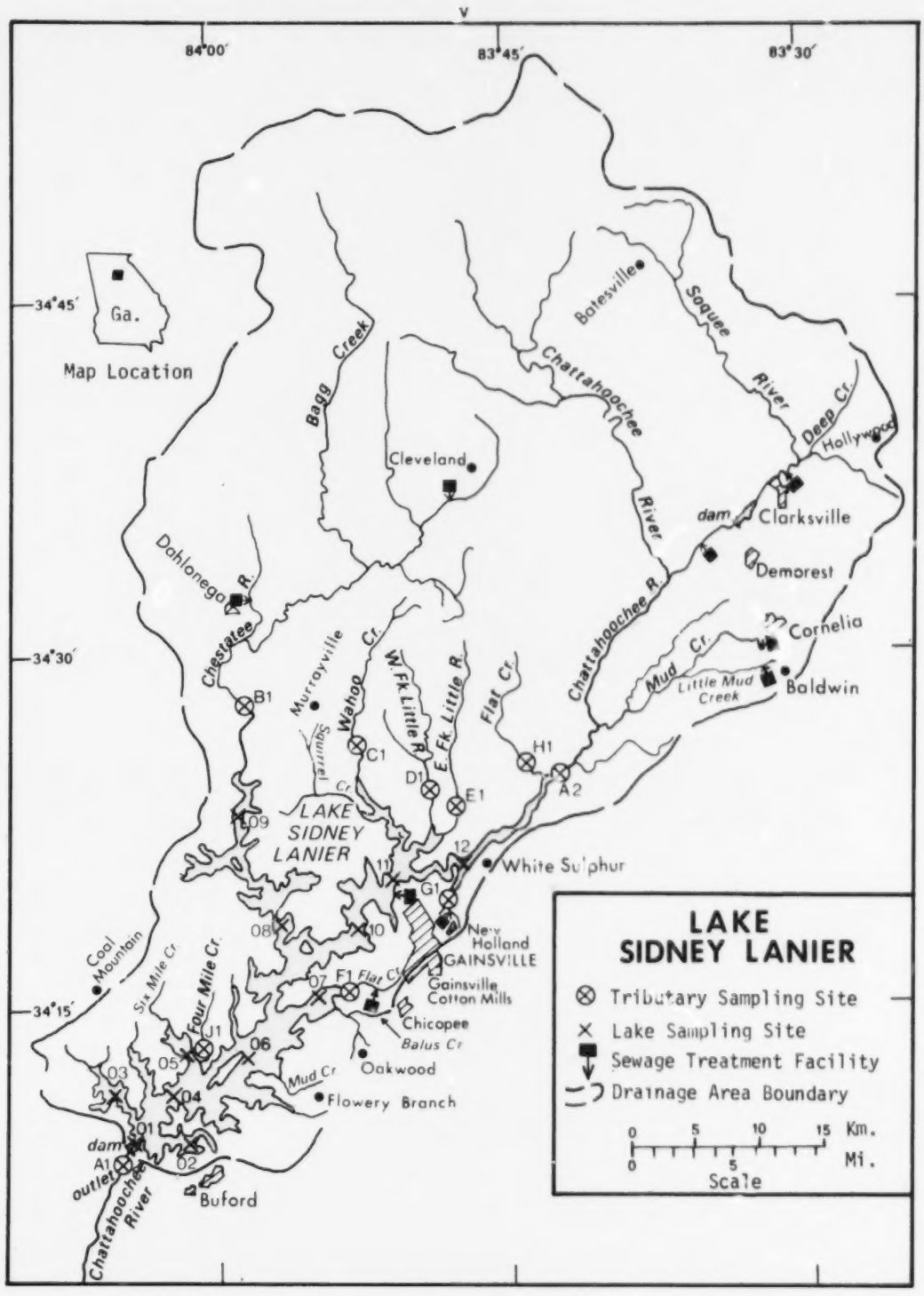
Major General Joel B. Paris, III, then the Adjutant General of Georgia, and Project Officer Lt. Colonel John R. Ranier, who directed the volunteer efforts of the Georgia National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF GEORGIA

LAKE NAME	COUNTY
Allatoona	Bartow, Cherokee, Cobb
Blackshear	Crisp, Dooly, Lee, Sumpter, Worth
Blue Ridge	Fannin
Burton	Rabun
Chatuge	Towns, GA; Clay, NC
Clark Hill	Columbia, Elbert, Lincoln, McDuffie, MWilks, GA; Abbeville, McCormick, SC
Harding	Harris, GA; Chambers, Lee, AL
Hartwell	Franklin, Hart, Stephens, GA; Anderson, Oconee, Pickens, SC
High Falls	Butts, Lamar, Monroe
Jackson	Butts, Jasper, Newton
Nottely	Union
Seminole	Decatur, Seminole, GA; Jackson, FL
Sidney Lanier	Dawson, Forsyth, Gwinnett, Hall, Lumpkin
Sinclair	Baldwin, Hancock, Putnam
Walter F. George	Clay, Quitman, Stewart, GA; Barbour, Henry, Russell, AL


84°00'
83°45'
83°30'
34°45'
34°30'
34°15'
Ga.
Map Location
Bagg Creek
Batesville
Soquee River
Deep Cr.
Hollywood
Chattahoochee River
Cleveland
dam
Clarksville
Demorest
Dahlonega R.
Chestatee
Murrayville
Wahoo Cr.
W. Fk. Little R.
E. Fk. Little R.
Flat Cr.
Chattahoochee R.
Mud Cr.
Little Mud Creek
Cornelia
Baldwin
B1
C1
D1
E1
H1
A2
Squirrel Cr.
LAKE SIDNEY LANIER
09
11
12
G1
White Sulphur
08
10
New Holland
GAINSVILLE
Gainsville Cotton Mills
07
F1
Flat Cr.
Chicopee
Balus Cr.
Oakwood
Mud Cr.
Flowery Branch
Cool Mountain
Six Mile Cr.
Four Mile Cr.
J1
06
05
03
04
01
02
dam
A1
outlet
Chattahoochee River
Buford
LAKE SIDNEY LANIER
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Drainage Area Boundary
0 5 10 15 Km.
0 5 Mi.
Scale

LAKE SIDNEY LANIER*

STORET NO. 1310

I. CONCLUSIONS

A. Trophic Condition:

Survey data indicate Lake Sidney Lanier is mesotrophic except for the Flat Creek embayment which is eutrophic. The lake ranked fifth in overall trophic quality when the 14 Georgia lakes sampled in 1973 were compared using a combination of six parameters**. Four of the lakes had less median total phosphorus, one had less and two had the same median dissolved phosphorus, seven had less median inorganic nitrogen, three had less mean chlorophyll a, and three lakes had greater mean Secchi disc transparency. Marked depression of dissolved oxygen with depth occurred at all 12 sampling stations in June; and depletion or near-depletion occurred at all stations in September and at stations 1, 2, 4, 5, 6, and 7 in November (see map, page v, for station locations).

Since 1968, algal and protozoan blooms have been observed in the Flat Creek embayment of Lake Sidney Lanier (Ahearn, Hall, and Reinhardt, 1971; Ahearn, 1971). These blooms and the high phosphorus concentrations measured during the Survey sampling year and at other times (Anonymous, 1971b) indicate degradation of the embayment and a eutrophic condition. During the Survey November sampling, for example, while mean orthophosphorus concentrations at the other 11 sampling stations ranged from 0.008

* Table of metric conversions--Appendix A.
** See Appendix B.

to 0.015 mg/l, the mean concentration at station 7 in the embayment was 0.099 mg/l.

Survey limnologists did not observe aquatic macrophytes or algal blooms during their sampling trips to the lake and commented on the generally attractive appearance of the lake.

B. Rate-Limiting Nutrient:

The algal assay results show that phosphorus was limiting at the time the assay samples were collected (06/29-30/73). The lake data indicate phosphorus limitation at all sampling stations in June and September but nitrogen limitation at eight of the 12 stations in November.

C. Nutrient Controllability:

1. Point sources--It is calculated that the phosphorus contributions of point sources considered in this study amounted to 49.2% of the total load during the sampling year. However, because of unsampled industrial inputs (see below), the actual point-source phosphorus load constitutes a greater percentage of the total load. The Gainesville wastewater treatment plants at Flat Creek and Linwood Drive contributed 19.4% and 13.3% of the total load, respectively, and the Cornelia plant contributed 10.3%. The remaining six wastewater treatment plants at Bladwin, Clarksville, Cleveland, Dahlonega, Demorest, and New Holland

collectively contributed 6.2% of the total phosphorus load; and septic tanks at parks, campsites, and lakeshore dwellings contributed an estimated 0.3% of the total.

A number of industries impact the lake for which loading estimates were not made, although it is reported that more than 85% of the Hall County point-source phosphorus (industrial and municipal) being discharged to Lake Sidney Lanier is from the two Gainesville wastewater treatment plants (Anonymous, 1971b).

Industrial discharges also contribute to the nutrient loads in Balus Creek, Squirrel Creek, Mud Creek (near Flowery Branch), Six Mile Creek, and Limestone Creek (Anonymous, 1971a). The first four of these streams were not sampled during the Survey. However, on the basis of data reported by the Georgia Water Quality Control Board (Anonymous, 1971b; page 67), the combined phosphorus load of Balus and Squirrel creeks amounts to about 6,800 kg per year. Considering the design flows and types of industries discharging to Six Mile and Mud creeks (page 19), the combined phosphorus load of the latter streams would not be expected to exceed the Balus-Squirrel creek load. The total load for the four streams, then, probably does not exceed 13,600 kg per year.

Including the 13,600 kg/yr estimated above, the phosphorus loading rate of Lake Sidney Lanier would be 1.07 $g/m^2/yr$, or about 1.6 times that proposed by Vollenweider (Vollenweider and Dillon, 1974) as a eutrophic rate (see page 22). It is calculated that 85% removal of phosphorus at the municipal point sources alone would reduce the loading rate to 0.66 $g/m^2/yr$, which is less than the eutrophic rate. If a similar reduction of phosphorus is provided at those industries of nutrient significance, an even lower rate would result; and the trophic condition of the lake in general, and the eutrophic embayments in particular, should be significantly improved.

However, the point-source discharges to Flat and Balus creeks are reported to have caused a considerable build-up of nutrient-rich sediments in the adjacent embayments (Strange, 1974), and it is expected that these sediments will be a source of phosphorus for some time as resolubilization occurs during anaerobic conditions. Therefore, improvement in the trophic condition of these two embayments is likely to be slower than in the less-heavily impacted embayments of the lake once phosphorus controls are initiated.

2. Non-point sources--The phosphorus contributions of non-point sources, including precipitation, accounted for

50.7% of the total phosphorus load. The Chattahoochee and Chestatee rivers contributed 14.6% and 17.7% of this load, respectively. The remaining seven sampled tributaries contributed 6.0% of the total phosphorus load, and the ungaged tributaries were estimated to have contributed 10.5% of the total.

The Chestatee River and Wahoo Creek had higher phosphorus export rates (46 kg $P/km^2/yr$ and 60 kg $P/km^2/yr$, respectively) than the other tributaries of this lake (see page 22) and the seven tributaries of nearby Allatoona Reservoir* (mean of 20 $kg/km^2/yr$; range of 7 to 39 $kg/km^2/yr$). The higher rate of the Chestatee River may be due to underestimation of the municipal point-source loads. However, the cause of the high export rate of Wahoo Creek is not evident in the Survey data or in the publications and data provided by the Georgia Department of Natural Resources.

* Working Paper No. 281.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

A. Lake Morphometry†:

1. Surface area: 161.47 kilometers^2.
2. Mean depth: 19.5 meters.
3. Maximum depth: 54.9 meters.
4. Volume: 3,148.665 x 10^6 m^3.
5. Mean hydraulic retention time: 1.6 years (based on outlet flow).

B. Tributary and Outlet:
(See Appendix C for flow data)

1. Tributaries -

Name	Drainage area (km^2)*	Mean flow (m^3/sec)*
Chattahoochee River	1,113.7	28.4
Chestatee River	613.8	15.8
Wahoo Creek	64.7	1.8
West Fork, Little River	46.6	0.9
East Fork, Little River	41.4	0.8
Flat Creek (F-1)	15.5	0.3
Limestone Creek	10.4	0.2
Flat Creek (H-1)	46.6	1.0
Four Mile Creek	20.7	0.3
Minor tributaries & immediate drainage -	528.4	10.9
Totals	2,501.8	60.4

2. Outlet -

Chattahoochee River	2,663.3**	60.5

† Hall, 1974; Martin and Hanson, 1966.
* For limits of accuracy, see Working Paper No. 175, "...Survey Methods, 1973-1976".
** Total drainage area adjusted to equal the sum of the subdrainage areas plus the area of the lake.

C. Precipitation*:

1. Year of sampling: 187.2 centimeters.

2. Mean annual: 140.0 centimeters.

* See Working Paper No. 175.

III. LAKE WATER QUALITY SUMMARY

Lake Sidney Lanier was sampled three times during the open-water season of 1973 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from twelve stations on the lake and from a number of depths at each station (see map, page v). During each visit, a single depth-integrated (4.6 m to surface) sample was composited from the stations for phytoplankton identification and enumeration; and during the first visit, four 18.9-liter depth-integrated samples were composited for algal assays (stations 1, 2, and 3 were combined; stations 4 and 5 were combined; stations 7, 8, and 9 were combined; and stations 10, 11, and 12 were combined). Also each time, a depth-integrated sample was collected from each of the stations for chlorophyll a analysis. The maximum depths sampled were 44.5 meters at station 1, 24.7 meters at station 2, 21.6 meters at station 3, 43.6 meters at station 4, 26.5 meters at station 5, 36.6 meters at station 6, 21.6 meters at station 7, 28.7 meters at station 8, 14.0 meters at station 9, 29.6 meters at station 10, 25.9 meters at station 11, and 14.3 meters at station 12.

The lake sampling results are presented in full in Appendix D and are summarized in the following table.

A. SUMMARY OF PHYSICAL AND CHEMICAL CHARACTERISTICS FOR LAKE SIDNEY LANIER
STORET CODE 1310

PARAMETER	1ST SAMPLING (6/29/73) 12 SITES RANGE	MEAN	MEDIAN	2ND SAMPLING (9/13/73) 12 SITES RANGE	MEAN	MEDIAN	3RD SAMPLING (11/ 9/73) 12 SITES RANGE	MEAN	MEDIAN
TEMP (C)	7.9 - 28.2	20.3	20.3	9.0 - 29.8	21.0	21.4	10.5 - 18.3	16.7	17.5
DISS OXY (MG/L)	0.1 - 9.8	5.8	6.2	0.0 - 8.5	3.1	2.2	0.0 - 9.0	5.8	7.2
CNDCTVY (MCROMO)	50. - 50.	50.	50.	25. - 114.	38.	32.	24. - 67.	31.	27.
PH (STAND UNITS)	6.2 - 9.1	7.2	6.7	5.6 - 9.1	6.3	6.1	5.7 - 6.8	6.2	6.2
TOT ALK (MG/L)	10. - 23.	12.	10.	10. - 31.	14.	12.	10. - 30.	12.	11.
TOT P (MG/L)	0.005 - 0.126	0.022	0.013	0.004 - 0.171	0.024	0.019	0.007 - 0.291	0.034	0.019
ORTHO P (MG/L)	0.002 - 0.040	0.005	0.003	0.002 - 0.074	0.005	0.003	0.003 - 0.172	0.018	0.013
NO2+NO3 (MG/L)	0.050 - 0.620	0.220	0.230	0.020 - 0.440	0.100	0.040	0.010 - 0.540	0.079	0.040
AMMONIA (MG/L)	0.040 - 0.550	0.121	0.090	0.020 - 2.080	0.237	0.050	0.040 - 1.340	0.166	0.070
KJEL N (MG/L)	0.200 - 1.100	0.378	0.300	0.200 - 2.900	0.548	0.400	0.200 - 1.700	0.352	0.200
INORG N (MG/L)	0.100 - 0.730	0.341	0.350	0.040 - 2.130	0.338	0.200	0.070 - 1.820	0.246	0.120
TOTAL N (MG/L)	0.250 - 1.210	0.598	0.580	0.220 - 2.950	0.648	0.530	0.220 - 2.180	0.432	0.250
CHLRPYL A (UG/L)	3.6 - 9.4	6.0	5.6	3.3 - 17.9	6.7	4.7	0.9 - 10.7	3.6	2.3
SECCHI (METERS)	1.8 - 3.0	2.6	2.7	1.5 - 3.4	2.5	2.6	1.8 - 4.0	2.7	2.1

B. Biological characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Algal units per ml
06/29/73	1. Fragilaria	132
	2. Cryptomonas	38
	3. Melosira	38
	4. Cyclotella	38
	5. Gymnodinium	28
	Other genera	85
	Total	359
09/13/73	1. Lyngbya	2,502
	2. Microcystis	287
	3. Synedra	137
	4. Dactylococcopsis	123
	5. Cryptomonas	55
	Other genera	343
	Total	3,447
11/09/73	1. Melosira	205
	2. Cyclotella	86
	3. Coccoid green cells	51
	4. Lyngbya	51
	5. Asterionella	34
	Other genera	102
	Total	529

2. Chlorophyll *a* -

Sampling Date	Station Number	Chlorophyll *a* (µg/l)
06/29/73	01	4.9
	02	3.6
	03	4.7
	04	4.7
	05	6.9
	06	5.6
	07	9.4
	08	5.5
	09	5.6
	10	5.7
	11	6.7
	12	8.3
09/13/73	01	3.9
	02	3.3
	03	4.7
	04	4.0
	05	4.0
	06	4.4
	07	12.2
	08	5.0
	09	7.2
	10	4.7
	11	8.8
	12	17.9
11/09/73	01	0.9
	02	2.2
	03	1.7
	04	1.2
	05	1.9
	06	2.1
	07	10.7
	08	2.4
	09	3.7
	10	4.7
	11	5.9
	12	6.4

C. Limiting Nutrient Study:

1. Stations 1, 2, and 3 -

a. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.004	0.212	0.1
0.010 P	0.014	0.212	0.8
0.020 P	0.024	0.212	3.3
0.050 P	0.054	0.212	4.9
0.025 P + 0.5 N	0.029	0.712	8.2
0.050 P + 1.0 N	0.054	1.212	18.5
1.0 N	0.004	1.212	0.1

b. Filtered and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.003	0.197	0.1
0.010 P	0.013	0.197	1.6
0.020 P	0.023	0.197	3.8
0.050 P	0.053	0.197	4.8
0.025 P + 0.5 N	0.028	0.697	9.6
0.050 P + 1.0 N	0.053	1.197	19.7
1.0 N	0.003	1.197	0.1

2. Stations 4 and 5 -

a. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.006	0.190	0.1
0.010 P	0.016	0.190	0.4
0.020 P	0.026	0.190	3.7
0.050 P	0.056	0.190	6.1
0.025 P + 0.5 N	0.031	0.690	6.8
0.050 P + 1.0 N	0.056	1.190	18.7
1.0 N	0.006	1.190	0.1

b. Filtered and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.003	0.182	0.1
0.010 P	0.013	0.182	2.3
0.020 P	0.023	0.182	5.5
0.050 P	0.053	0.182	6.0
0.025 P + 0.5 N	0.028	0.682	11.1
0.050 P + 1.0 N	0.053	1.182	24.0
1.0 N	0.003	1.182	0.2

3. Stations 7, 8, and 9 -

a. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.020	0.282	4.6
0.010 P	0.030	0.282	6.9
0.020 P	0.040	0.282	8.0
0.050 P	0.070	0.282	7.1
0.025 P + 0.5 N	0.045	0.782	14.7
0.050 P + 1.0 N	0.070	1.282	17.3
1.0 N	0.020	1.282	4.1

b. Filtered and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.014	0.285	3.9
0.010 P	0.024	0.285	6.6
0.020 P	0.034	0.285	6.9
0.050 P	0.064	0.285	8.4
0.025 P + 0.5 N	0.039	0.785	15.9
0.050 P + 1.0 N	0.064	1.285	23.6
1.0 N	0.014	1.285	3.6

4. Stations 10, 11, and 12 -

a. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.012	0.329	0.3
0.010 P	0.022	0.329	7.1
0.020 P	0.032	0.329	8.2
0.050 P	0.062	0.329	7.8
0.025 P + 0.5 N	0.037	0.829	15.0
0.050 P + 1.0 N	0.062	1.329	26.4
1.0 N	0.012	1.329	0.4

b. Filtered and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.006	0.327	0.1
0.010 P	0.016	0.327	3.8
0.020 P	0.026	0.327	6.9
0.050 P	0.056	0.327	9.2
0.025 P + 0.5 N	0.031	0.827	14.3
0.050 P + 1.0 N	0.056	1.327	26.1
1.0 N	0.006	1.327	0.1

5. Discussion -

The control yields of the assay alga, Selenastrum capricornutum, indicate that the potential primary productivity at stations 1, 2, 3, 4, and 5 was low; was moderately high at stations 7, 8, and 9; and was moderate at stations 10, 11, and 12 at the time the samples were taken (06/29-30/73). In all assays, increasing yields with increasing concentrations of orthophosphorus indicate that Lake Sidney Lanier was phosphorus limited at that time. Note that in all cases the

addition of nitrogen alone did not produce a yield significantly different from the control.

The differences shown by the control yields at stations 7, 8, and 9 versus other station groups indicate differences in availability of nutrients for primary productivity. Note that the orthophosphorus concentration in the sample from stations 7, 8, and 9 was twice as great or more than in the samples from the other stations.

The lake data obtained at the time the assay sample was collected also indicate that Lake Sidney Lanier was limited by phosphorus. At all sampling sites, the mean inorganic nitrogen to orthophosphorus ratios were 23 to 1 or greater. The data indicate phosphorus limitation in September as well (the mean N/P ratios were 22/1 or more); however, nitrogen limitation is indicated at eight of the stations in November.

Following is a tabulation of the November mean N/P ratios by station with the indicated limiting nutrient in parentheses.

Station	11/09/73	Station	11/09/73
01	33/1 (P)	07	10/1 (N)
02	11/1 (N)	08	11/1 (N)
03	9/1 (N)	09	7/1 (N)
04	30/1 (P)	10	10/1 (N)
05	21/1 (P)	11	10/1 (N)
06	27/1 (P)	12	9/1 (N)

IV. NUTRIENT LOADINGS
(See Appendix E for data)

For the determination of nutrient loadings, the Georgia National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v), except for the high runoff month of February when two samples were collected. Sampling was begun in March, 1973, and was completed in February, 1974.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Georgia District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

Except for Flat Creek (F-1) and Limestone Creek (G-1), nutrient loads were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Nutrient loads shown are those measured minus point-source loads, if any.

The nutrient loads estimated for the Gainesville Flat Creek and New Holland wastewater treatment plants exceeded the loads measured in Flat Creek and Limestone Creek at stations F-1 and G-1, and the background loads for these streams and the unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated using the means of the nutrient loads, in $kg/km^2/yr$, at stations D-1, E-1, and H-1 and multiplying the means by the F-1, G-1, and ZZ areas in km^2.

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* See Working Paper No. 175.

The operators of the Gainesville-Flat Creek, Gainesville-Linwood, and Cornelia wastewater treatment plants provided monthly effluent samples and corresponding flow data; however, the Cornelia flows appear to be estimates (see Appendix E).

The communities of Baldwin, Demorest, New Holland, Cleveland, and Dahlonega did not participate in the Survey, and the City of Clarksville provided only two effluent samples. Nutrient loads from these sources were estimated at 1.134 kg P and 3.401 kg N/capita/year.

Nutrient loads were not estimated for a number of small wastewater treatment plants serving trailer parks, restaurants, schools, and laundry facilities (Anonymous, 1971b); however, these point sources probably are relatively insignificant as compared to the sources listed below.

With the exception of the Deering-Milliken Corp., the listed industries impact tributaries which were not sampled in the Survey, and the nutrients from these sources are not included in the loading tables on the following pages.

A. Waste Sources*:

1. Known muncipal -

Name	Pop. Served	Treatment	Mean Flow (m^3/d)	Receiving Water
Gainesville-Flat Creek	18,000	trickling filter	13,501.1	Flat Creek
Gainesville-Linwood	4,000	trickling filter	6,476.1	Lake Sidney Lanier
Baldwin	772	stab. pond	292.2**	Little Mud Cr.
Cornelia	3,014	trickling filter	9,462.5	Mud Creek
Clarksville	1,294	trickling filter	489.8**	Soquee River
Demorest	1,070	Imhoff tank	405.0**	Hazel Creek
New Holland	1,570	trickling filter	594.2**	Limestone Creek
Cleveland	1,353	act. sludge	512.1**	Little Niagara Creek
Dahlonega	2,658	Imhoff tank	1,006.1**	Town Branch

2. Industries -

Name	Type of Waste	Treatment	Design Flow (m^3/d)	Receiving Water
Chicopee Mfg. Co.	domestic & textile	act. sludge	1,892.5	Balus Creek
Marell Poultry Co., Murrayville	poultry processing	aer. pond	2,535.9	Squirrel Creek
Deering-Milliken Serv. Corp., New Holland	domestic & textile	aer. pond	2,535.9	Limestone Creek
N. Georgia Rendering Co., Cumming	conden-sate, wash water	anaerobic pond	?	Six Mile Creek
William Wrigley, Jr., Co., Gainesville	domestic & food	act. sludge	60.6	Mud Creek
Gold Kist Feedmill Plt., Flowery Branch	cooling water spills	emergency spill pond	4.5	Mud Creek

* Anonymous, 1972.

** Flow estimate based on 0.3785 m^3/capita/day.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	kg P/ yr	% of total
a. Tributaries (non-point load) -		
Chattahoochee River	23,095	14.6
Chestatee River	28,025	17.7
Wahoo Creek	3,895	2.4
West Fork, Little River	1,495	0.9
East Fork, Little River	1,495	0.9
Flat Creek (F-1)	490	0.3
Limestone Creek	330	0.2
Flat Creek (H-1)	1,230	0.8
Four Mile Creek	550	0.3
b. Minor tributaries & immediate drainage (non-point load) -	16,695	10.5
c. Known municipal STP's -		
Gainesville-Flat Creek	30,775	19.4
Gainesville-Linwood	21,055	13.3
Baldwin	875	0.6
Cornelia	16,385	10.3
Clarksville	1,465	0.9
Cleveland	1,535	1.0
Dahlonega	3,015	1.9
Demorest	1,215	0.8
New Holland	1,780	1.1
d. Septic tanks* -	410	0.3
e. Industrial - Unknown	?	-
f. Direct precipitation** -	2,825	1.8
Total	158,635	100.0

2. Outputs -

Lake outlet - Chattahoochee River 16,880

3. Net annual P accumulation - 141,755 kg.

* Estimate based on 1,093 lakeshore dwellings, 19 parks, and 42 camps; see Working Paper No. 175.
** See Working Paper No. 175.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	kg N/ yr	% of total
a. Tributaries (non-point load) -		
Chattahoochee River	539,625	31.3
Chestatee River	279,825	16.2
Wahoo Creek	50,075	2.9
West Fork, Little River	28,745	1.7
East Fork, Little River	30,370	1.8
Flat Creek (F-1)	9,515	0.6
Limestone Creek	6,385	0.4
Flat Creek (H-1)	22,220	1.3
Four Mile Creek	13,715	0.8
b. Minor tributaries & immediate drainage (non-point load) -	324,385	18.8
c. Known municipal STP's -		
Gainesville-Flat Creek	101,985	5.9
Gainesville-Linwood	43,080	2.5
Baldwin	1,225	<0.1
Cornelia	56,015	3.2
Clarksville	4,400	0.3
Cleveland	4,600	0.3
Dahlonega	9,040	0.5
Demorest	3,640	0.2
New Holland	5,340	0.3
d. Septic tanks* -	15,275	0.9
e. Industrial - Unknown	?	-
f. Direct precipitation** -	174,325	10.1
Total	1,724,385	100.0

2. Outputs -

Lake outlet - Chattahoochee River	1,385,530

3. Net annual N accumulation - 338,855 kg.

* Estimate based on 1,093 lakeshore dwellings, 19 parks, and 42 camps; see Working Paper No. 175.

** See Working Paper No. 175.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	kg P/km²/yr	kg N/km²/yr
Chattahoochee River	21	485
Chestatee River	46	456
Wahoo Creek	60	774
West Fork, Little River	32	617
East Fork, Little River	36	748
Flat Creek (H-1)	26	477
Four Mile Creek	27	663

E. Yearly Loading Rates:

In the following table, the existing phosphorus loading rates are compared to those proposed by Vollenweider (Vollenweider and Dillon, 1974). Essentially, his "dangerous" rate is the rate at which the receiving water would become eutrophic or remain eutrophic; his "permissible" rate is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic rate would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with short hydraulic retention times.

	Total Phosphorus		Total Nitrogen	
	Total	Accumulated	Total	Accumulated
grams/m²/yr	0.98	0.88	10.7	2.1

Vollenweider loading rates for phosphorus (g/m²/yr) based on mean depth and mean hydraulic retention time of Lake Sidney Lanier:

"Dangerous" (eutrophic rate)	0.68
"Permissible" (oligotrophic rate)	0.34

V. LITERATURE REVIEWED

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VI. APPENDICES

APPENDIX A

LAKE RANKINGS

LAKES RANKED BY INDEX NOS.

RANK	LAKE CODE	LAKE NAME	INDEX NO
1	1316	BLUE RIDGE LAKE	524
2	1316	BURTON LAKE	523
3	1303	CHATUGE LAKE	424
4	1311	NOTTELY RESERVOIR	393
5	1310	LAKE SIDNEY LANIER	385
6	1304	CLARK HILL RESERVOIR	309
7	1301	ALLATOONA RESERVOIR	286
8	1302	BLACKSHEAR LAKE	264
9	1313	SINCLAIR LAKE	254
10	1312	LAKE SEMINOLE	253
11	1319	HIGH FALLS LAKE	192
12	1314	LAKE EUFAULA	184
13	1309	JACKSON LAKE	116
14	1317	LAKE HARDING	77

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS P
1301	ALLATOONA RESERVOIR	0.020	0.150	443.167	7.489	14.900	0.005
1302	BLACKSHEAR LAKE	0.035	0.250	468.091	1.855	11.700	0.014
1303	CHATUGE LAKE	0.014	0.110	382.778	6.339	14.900	0.005
1304	CLARK HILL RESERVOIR	0.024	0.150	439.250	6.715	14.900	0.007
1309	JACKSON LAKE	0.094	0.530	461.385	14.577	14.800	0.027
1310	LAKE SIDNEY LANIER	0.016	0.180	396.417	5.431	14.900	0.004
1311	NOTTELY RESERVOIR	0.015	0.130	405.667	6.656	14.900	0.004
1312	LAKE SEMINOLE	0.040	0.405	456.133	6.760	11.800	0.010
1313	SINCLAIR LAKE	0.028	0.230	440.667	8.006	14.900	0.005
1314	LAKE EUFAULA	0.048	0.345	457.667	9.083	14.400	0.011
1316	BLUE RIDGE LAKE	0.010	0.105	394.889	3.078	13.000	0.004
1317	LAKE HARDING	0.114	0.640	467.538	7.438	14.900	0.045
1318	BURTON LAKE	0.007	0.100	363.889	2.733	14.900	0.003
1319	HIGH FALLS LAKE	0.047	0.115	459.444	15.075	14.900	0.009

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500- MEAN SEC	MEAN CHLORA	15- MIN DO	MEDIAN DISS P	INDEX NO
1301	ALLATOONA RESERVOIR	62 (8)	54 (7)	46 (6)	31 (4)	31 (0)	62 (7)	286
1302	BLACKSHEAR LAKE	38 (5)	31 (4)	0 (0)	100 (13)	100 (13)	15 (2)	284
1303	CHATUGE LAKE	85 (11)	85 (11)	92 (12)	69 (9)	31 (0)	62 (7)	424
1304	CLARK HILL RESERVOIR	54 (7)	62 (8)	62 (8)	54 (7)	31 (0)	46 (6)	309
1309	JACKSON LAKE	8 (1)	8 (1)	15 (2)	8 (1)	69 (9)	8 (1)	116
1310	LAKE SIDNEY LANIER	69 (9)	46 (6)	77 (10)	77 (10)	31 (0)	85 (10)	385
1311	NOTTELY RESERVOIR	77 (10)	69 (9)	69 (9)	62 (8)	31 (0)	85 (10)	393
1312	LAKE SEMINOLE	31 (4)	15 (2)	38 (5)	46 (6)	92 (12)	31 (4)	253
1313	SINCLAIR LAKE	46 (6)	38 (5)	54 (7)	23 (3)	31 (0)	62 (7)	254
1314	LAKE EUFAULA	15 (2)	23 (3)	31 (4)	15 (2)	77 (16)	23 (3)	184
1316	BLUE RIDGE LAKE	92 (12)	92 (12)	85 (11)	85 (11)	85 (11)	85 (10)	524
1317	LAKE HARDING	0 (0)	0 (0)	8 (1)	38 (5)	31 (0)	0 (0)	77
1318	BURTON LAKE	100 (13)	100 (13)	100 (13)	92 (12)	31 (0)	100 (13)	523
1319	HIGH FALLS LAKE	23 (3)	77 (10)	23 (3)	0 (0)	31 (0)	38 (5)	192

APPENDIX B

CONVERSIONS FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX C

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR GEORGIA 01/07/76

LAKE CODE 1310 LAKE SIDNEY LANIER

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 2693.6

NORMALIZED FLOWS(CMS)

TRIBUTARY	SUB-DRAINAGE AREA(SQ KM)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1310A1	2693.6	50.04	47.23	65.13	81.07	70.71	57.03	58.42	68.75	64.28	55.36	59.55	48.08	60.52
1310A2	1113.7	33.56	39.59	44.46	39.02	30.41	25.85	25.26	23.28	18.09	17.13	19.88	25.26	28.42
1310B1	613.8	19.14	23.73	26.84	23.64	17.47	12.80	12.49	10.93	8.66	8.61	10.65	14.81	15.77
1310C1	64.7	2.07	2.66	2.97	2.78	2.10	1.59	1.44	1.22	0.99	0.91	1.05	1.59	1.77
1310D1	46.6	1.10	1.33	1.56	1.42	0.93	0.82	0.59	0.68	0.45	0.54	0.62	0.82	0.90
1310E1	41.4	0.96	1.19	1.39	1.27	0.82	0.74	0.51	0.59	0.42	0.45	0.57	0.74	0.80
1310F1	15.5	0.34	0.40	0.48	0.42	0.28	0.25	0.17	0.14	0.11	0.11	0.17	0.25	0.26
1310G1	10.4	0.23	0.28	0.34	0.31	0.20	0.17	0.11	0.08	0.08	0.08	0.11	0.17	0.18
1310H1	46.6	1.22	1.47	1.70	1.56	1.05	0.91	0.65	0.74	0.51	0.57	0.68	0.91	0.99
1310J1	20.7	0.42	0.51	0.59	0.54	0.37	0.34	0.23	0.17	0.14	0.17	0.23	0.34	0.34
1310ZZ	528.4	13.20	16.31	18.49	16.31	12.06	8.83	8.61	7.56	5.97	5.97	7.33	10.22	10.88

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 2693.6
SUM OF SUB-DRAINAGE AREAS = 2501.9

TOTAL FLOW IN = 725.63
TOTAL FLOW OUT = 725.65

NOTE *** LAKE AREA=74 SQ MI. NOT INCLUDED IN SUM OF SUB-DRAINAGE AREAS

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1310A1	3	73	97.69	10	16.71				
	4	73	118.65	14	148.95				
	5	73	109.30	12	148.95				
	6	73	139.60	20	79.29				
	7	73	64.85	15	15.35				
	8	73	68.24	3	15.80				
	9	73	53.24	15	15.21				
	10	73	56.63	14	15.74				
	11	73	71.36	10	22.37				
	12	73	36.25	23	22.99				
	1	74	100.81	1	24.75	19	129.12		
	2	74	87.78	13	81.27	28	135.92		
1310A2	3	73	58.33	10	49.55				
	4	73	57.48	14	45.59				
	5	73	77.59	12	52.45				
	6	73	69.94	20	51.54				
	7	73	35.68	14	28.88				
	8	73	29.73	3	32.28				
	9	73	22.99	15	25.74				
	10	73	16.11	14	13.28				
	11	73	21.86	10	10.28				
	12	73	43.32	23	22.91				
	1	74	62.86	1	179.81	19	41.91		
	2	74	57.48	14	49.55	28	46.44		

TRIBUTARY FLOW INFORMATION FOR GEORGIA 01/07/76

LAKE CODE 1310 LAKE SIDNEY LANIER

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1310B1	3	73	35.11	10	28.60				
	4	73	34.83	14	26.22				
	5	73	44.46	12	30.30				
	6	73	34.55	20	28.32				
	7	73	17.61	14	17.02				
	8	73	13.99	3	17.73				
	9	73	11.02	18	15.35				
	10	73	8.10	13	7.33				
	11	73	11.72	10	6.85				
	12	73	25.32	23	12.63				
	1	74	35.40	1	99.11	19	24.24		
	2	74	34.55	14	27.33	27	26.59		
1310C1	3	73	3.91	10	3.26				
	4	73	4.08	14	2.97				
	5	73	5.35	12	3.54				
	6	73	4.30						
	7	73	1.98	14	1.93				
	8	73	1.53	3	1.98				
	9	73	1.25	18	1.59				
	10	73	0.85	13	0.79				
	11	73	1.16	10	0.76				
	12	73	2.72	23	1.42				
	1	74	3.88	1	11.61	19	2.75		
	2	74	3.85	14	3.11	27	3.03		
1310D1	3	73	2.04	10	1.53				
	4	73	2.10	14	1.44				
	5	73	2.38	12	1.59				
	6	73	2.24	20	1.50				
	7	73	0.85	14	1.08				
	8	73	0.88	3	1.10				
	9	73	1.25	18	0.96				
	10	73	0.51	13	0.62				
	11	73	0.68	10	0.59				
	12	73	1.42	23	0.88				
	1	74	2.07	1	3.62	19	1.39		
	2	74	1.93	14	1.50	27	1.47		
1310E1	3	73	1.81	10	1.39				
	4	73	1.87	14	1.30				
	5	73	2.10	12	1.44				
	6	73	1.98	20	1.39				
	7	73	0.71	14	0.93				
	8	73	0.76	3	0.96				
	9	73	0.57	15	0.82				
	10	73	0.42	13	0.48				
	11	73	0.62	10	0.48				
	12	73	1.25	23	0.74				
	1	74	1.81	1	3.54	19	1.22		
	2	74	1.73	14	1.36	27	1.30		

TRIBUTARY FLOW INFORMATION FOR GEORGIA 01/07/76

LAKE CODE 1310 LAKE SIDNEY LANIER

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1310F1	3	73	0.59	10	0.31				
	4	73	0.62	14	0.31				
	5	73	0.40	12	0.51				
	6	73	0.59	20	0.28				
	7	73	0.25	15	0.17				
	8	73	0.14	3	0.23				
	9	73	0.14	15	0.17				
	10	73	0.13	14	0.17				
	11	73	0.15	10	0.14				
	12	73	0.27	23	0.20				
	1	74	0.65	1	0.74	19	0.23		
	2	74	0.37	14	0.23	28	0.28		
1310G1	3	73	0.42	10	0.20				
	4	73	0.45	14	0.20				
	5	73	0.28	12	0.42				
	6	73	0.40	20	0.17				
	7	73	0.16	14	0.08				
	8	73	0.08	3	0.11				
	9	73	0.11	15	0.08				
	10	73	0.10	13	0.06				
	11	73	0.10	10	0.06				
	12	73	0.18	23	0.08				
	1	74	0.42	1	0.76	19	0.11		
	2	74	0.25	14	0.11	28	0.17		
1310H1	3	73	2.24	10	1.76				
	4	73	2.29	14	1.64				
	5	73	2.66	12	1.87				
	6	73	2.46	20	1.73				
	7	73	0.91	14	1.10				
	8	73	0.93	3	1.16				
	9	73	0.65	15	1.59				
	10	73	0.54	14	0.51				
	11	73	0.74	10	0.48				
	12	73	1.56	23	0.85				
	1	74	2.27	1	5.66	19	1.53		
	2	74	2.12	14	1.70	28	1.61		
1310J1	3	73	0.65	10	0.51				
	4	73	0.76	14	0.54				
	5	73	0.74	12	0.51				
	6	73	0.65	20	0.45				
	7	73	0.28	15	0.28				
	8	73	0.20	3	0.28				
	9	73	0.14	15	0.45				
	10	73	0.19	14	0.20				
	11	73	0.28	10	0.17				
	12	73	0.37	23	0.20				
	1	74	0.82	1	1.19	19	0.28		
	2	74	0.45	13	0.31	28	0.37		

TRIBUTARY FLOW INFORMATION FOR GEORGIA 01/07/76

LAKE CODE 1310 LAKE SIDNEY LANIER

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1310ZZ	3	73	29.45						
	4	73	29.17						
	5	73	37.66						
	6	73	29.17						
	7	73	17.10						
	8	73	18.66						
	9	73	9.26						
	10	73	6.80						
	11	73	9.85						
	12	73	21.27						
	1	74	30.30						
	2	74	28.88						

APPENDIX D

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 74/11/26

131001
34 09 40.0 084 04 25.0
LAKE SIDNEY LANIER
13135 GEORGIA

11EPALES
3

2111202
0132 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/29	10 00	0000	26.8		120	50K	8.40	10K	0.060	0.200	0.080	0.003
	10 00	0006	26.7	8.6		50K	8.40	10K	0.070	0.200K	0.080	0.002
	10 00	0015	26.4	8.8		50K	8.30	10K	0.070	0.200K	0.100	0.002
	10 00	0030	19.4	9.0		50K	6.60	10	0.120	0.200K	0.250	0.002K
	10 00	0050	16.2	6.4		50K	6.40	10K	0.060	0.400	0.330	0.002K
	10 00	0075	11.9	6.8		50K	6.40	10K	0.040	0.200K	0.360	0.002
	10 00	0100	9.4	5.8		50K	6.30	10K	0.060	0.200K	0.440	0.002K
	10 00	0125	7.9	3.8		50K	6.20	10K	0.050	0.300	0.430	0.002K
73/09/13	10 15	0000	27.9	7.2	132	33	6.80	13	0.040	0.400	0.040	0.002
	10 15	0015	27.9	7.6		33	6.40	12	0.030	0.200	0.020	0.002
	10 15	0030	27.9	7.2		33	6.20	11	0.030	0.200	0.020	0.003
	10 15	0045	20.9	2.6		28	5.80	11	0.030	0.200K	0.150	0.002
	10 15	0065	16.5	1.8		27	5.80	11	0.020	0.200K	0.340	0.002K
	10 15	0085	13.3	3.0		26	5.80	14	0.040	0.200K	0.370	0.002
	10 15	0105	10.9	2.6		27	5.80	14	0.020	0.200K	0.400	0.002K
	10 15	0125	9.4	0.2		30	5.80	18	0.200	0.400	0.190	0.002K
	10 15	0145	9.1	0.1		38	6.00	20	0.370	0.600	0.040	0.002
73/11/09	12 15	0000	18.1		156	31	6.80	10K	0.050	0.200	0.050	0.011
	12 15	0010	18.2	7.0		28	6.80	10K	0.040	0.200K	0.050	0.011
	12 15	0025	18.0	7.0		27	6.50	10K	0.040	0.200K	0.050	0.010
	12 15	0050	18.0	7.2		27	6.30	10K	0.050	0.200K	0.050	0.010
	12 15	0070	17.6	2.0		27	6.10	10K	0.040	0.200K	0.130	0.011
	12 15	0090	14.4	0.2		27	5.90	10K	0.040	0.200K	0.310	0.011
	12 15	0110	11.4	0.0		35	6.20	16	0.450	0.500	0.030	0.004
	12 15	0125	10.8	0.0		53	6.20	18	0.660	0.800	0.030	0.003
	12 15	0145	10.5	0.0		60	6.20	23	0.820	1.000	0.030	0.019

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131001
34 09 40.0 084 04 25.0
LAKE SIDNEY LANIER
13135 GEORGIA

11EPALES 2111202
3 0132 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/29	10 00	0000	0.008	4.9
	10 00	0006	0.010	
	10 00	0015	0.009	
	10 00	0030	0.008	
	10 00	0050	0.007	
	10 00	0075	0.007	
	10 00	0100	0.010	
	10 00	0125	0.013	
73/09/13	10 15	0000	0.006	3.9
	10 15	0015	0.005	
	10 15	0030	0.005	
	10 15	0045	0.005	
	10 15	0065	0.004	
	10 15	0085	0.004	
	10 15	0105	0.006	
	10 15	0125	0.008	
	10 15	0146	0.010	
73/11/09	12 15	0000	0.012	0.9
	12 15	0010	0.012	
	12 15	0025	0.011	
	12 15	0050	0.010	
	12 15	0070	0.011	
	12 15	0090	0.012	
	12 15	0110	0.012	
	12 15	0125	0.038	
	12 15	0145	0.054	

STORET RETRIEVAL DATE 74/11/26

131002
34 10 10.0 084 01 03.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0045 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/29	10 55	0000	27.4		120	50K	8.70	10K	0.070	0.200	0.090	0.002
	10 55	0006	27.4	9.0		50K	8.60	10K	0.060	0.200K	0.080	0.003
	10 55	0015	25.8	8.4		50K	8.30	10K	0.060	0.200	0.080	0.002
	10 55	0030	18.7	7.2		50K	6.70	10K	0.110	0.200K	0.240	0.005
	10 55	0050	16.2	6.0		50K	6.60	10K	0.130	0.200K	0.250	0.002K
	10 55	0070	12.6	4.0		50K	6.40	10K	0.100	0.200K	0.280	0.002K
	10 55	0081	11.1	3.4		50K	6.30	10K	0.110	0.200K	0.270	0.002K
73/09/13	09 30	0000	27.9	7.2	110	33	6.90	10	0.050	0.900	0.030	0.006
	09 30	0020	27.8	7.2		32	6.40	10	0.030	0.300	0.020	0.003
	09 30	0030	24.9	3.4		31	6.10	12	0.040	0.200K	0.040	0.002
	09 30	0040	21.4	2.0		28	6.00	11	0.050	0.200K	0.140	0.002K
	09 30	0055	18.3	0.1		31	5.90	12	0.080	0.200K	0.180	0.002K
	09 30	0076	15.0	0.1		36	5.90	16	0.160	0.200	0.020	0.002K
73/11/09	13 45	0000	18.3		156	28	6.20	10K	0.050	0.300	0.040	0.011
	13 45	0010	18.3	8.0		28	6.00	10K	0.040	0.200K	0.040	0.011
	13 45	0025	18.2	7.8		29	6.00	10K	0.040	0.200K	0.030	0.009
	13 45	0060	18.2	7.2		30	6.00	10K	0.060	0.200K	0.040	0.011
	13 45	0080	16.4	0.0		40	5.80	13	0.220	0.400	0.030	0.013

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131002
34 10 10.0 084 01 03.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0085 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/29	10 55	0000	0.008	3.6
	10 55	0005	0.007	
	10 55	0015	0.008	
	10 55	0030	0.009	
	10 55	0050	0.008	
	10 55	0070	0.005	
	10 55	0081	0.006	
73/09/13	09 30	0000	0.010	3.3
	09 30	0020	0.007	
	09 30	0030	0.006	
	09 30	0040	0.005	
	09 30	0055	0.012	
	09 30	0075	0.008	
73/11/09	13 45	0000	0.010	2.2
	13 45	0010	0.008	
	13 45	0025	0.007	
	13 45	0060	0.010	
	13 45	0080	0.019	

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STORET RETRIEVAL DATE 74/11/26

131003
34 12 06.0 084 05 32.0
LAKE SIDNEY LANIER
13117 GEORGIA

11EPALES 2111202
3 0075 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/29	13 50	0000	28.1		120	50K	6.80	10K	0.070	0.600	0.070	0.006
	13 50	0006	28.1	8.2		50K	7.20	10K	0.040	0.200	0.070	0.002
	13 50	0015	23.5	9.8		50K	7.90	10K	0.050	0.200	0.140	0.002
	13 50	0030	18.8	6.5		50K	6.70	10K	0.140	0.200K	0.260	0.002
	13 50	0050	15.3	5.8		50K	6.70	10K	0.080	0.200K	0.270	0.003
	13 50	0071	11.6	4.0		50K	6.40	10	0.050	0.200K	0.360	0.003
73/09/12	11 00	0000	28.2	7.2	120	33	6.40	11	0.060	0.900	0.040	0.009
	11 00	0015	28.1	7.2		34	6.10	10K	0.030	0.200K	0.030	0.005
	11 00	0030	25.9	1.4		34	5.90	11	0.040	0.200K	0.030	0.005
	11 00	0045	20.2	0.1		31	5.70	10	0.070	0.200K	0.160	0.004
	11 00	0060	17.3	0.1		35	5.80	14	0.140	0.300	0.090	0.005
	11 00	0068	15.5	0.0		63	6.00	21	0.420	0.500	0.050	0.004
73/11/09	12 50	0000	17.8		84	31	6.00	13	0.070	0.400	0.040	0.013
	12 50	0010	17.8	7.2		30	6.00	13	0.080	0.200K	0.030	0.011
	12 50	0025	17.8	7.6		29	6.00	11	0.060	0.200K	0.030	0.011
	12 50	0050	17.7	7.6		30	5.90	11	0.060	0.200K	0.030	0.011
	12 50	0062	17.5	7.2		30	6.00	10	0.070	0.300	0.040	0.011

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131003
34 12 06.0 084 05 32.0
LAKE SIDNEY LANIER
13117 GEORGIA

11EPALES 2111202
3 0075 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/29	13 50	0000	0.016	4.7
	13 50	0005	0.014	
	13 50	0015	0.012	
	13 50	0030	0.024	
	13 50	0050	0.017	
	13 50	0071	0.023	
73/09/12	11 30	0000	0.026	4.7
	11 30	0015	0.023	
	11 30	0030	0.022	
	11 30	0045	0.010	
	11 30	0060	0.005	
	11 30	0068	0.004	
73/11/09	12 50	0000	0.011	1.7
	12 50	0010	0.009	
	12 50	0025	0.009	
	12 50	0050	0.011	
	12 50	0062	0.030	

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STORET RETRIEVAL DATE 74/11/26

131004
34 11 30.0 084 02 49.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0132 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/29	14	30 0000	27.4		120	50K	8.60	10K	0.080	0.400	0.070	0.003
	14	30 0006	27.5	8.6		50K	8.20	10K	0.100	0.200K	0.070	0.003
	14	30 0015	26.7	9.1		50K	7.00	10K	0.050	0.200K	0.180	0.002
	14	30 0030	19.7	7.7		50K	6.80	10K	0.060	0.200K	0.190	0.003
	14	30 0050	16.1	5.7		50K	6.40	10K	0.060	0.200K	0.340	0.002
	14	30 0075	11.4	6.5		50K	6.40	10K	0.060	0.200K	0.380	0.003
	14	30 0100	9.2	6.2		50K	6.30	10K	0.070	0.200K	0.420	0.003
	14	30 0128	7.9	3.9		50K	6.20	10K	0.060	0.200K	0.470	0.003
73/09/11	16	25 0000	28.5	7.4	126	32	7.00	12	0.040	0.500	0.030	0.002
	16	25 0025	27.7	7.0		33	6.10	10	0.040	0.200	0.030	0.002K
	16	25 0038	21.9	2.0		29	5.90	11	0.050	0.300	0.110	0.002K
	16	25 0050	18.7	1.4		27	5.70	10K	0.040	0.200	0.260	0.002K
	16	25 0075	14.1	2.6		25	5.60	10	0.030	0.200K	0.340	0.002K
	16	25 0100	10.4	1.8		25	5.60	10	0.050	0.200	0.440	0.002
	16	25 0125	9.5	0.0		29	8.80	13	0.300	0.600	0.100	0.002K
	16	25 0143	9.0	0.0		56	6.30	19	0.720	1.000	0.040	0.002K
73/11/09	13	25 0000	18.1		144	28	6.10	11	0.060	0.200	0.040	0.010
	13	25 0010	18.1	8.2		27	6.00	10K	0.060	0.200K	0.040	0.010
	13	25 0025	19.1	6.8		28	6.00	10K	0.070	0.200K	0.040	0.012
	13	25 0060	18.0	7.2		27	6.00	10K	0.060	0.200K	0.040	0.006
	13	25 0090	14.2	0.0		28	5.70	10K	0.070	0.200K	0.300	0.005
	13	25 0125	10.9	0.0		52	6.00	18	0.640	0.700	0.030	0.005

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131604
34 11 30.0 084 02 49.0
LAKE SIDNEY LANIER
13149 GEORGIA

11EPALES 2111202
3 0132 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLOPHYL A UG/L
73/06/29	14 30	0000	0.010	4.7
	14 30	0006	0.014	
	14 30	0015	0.011	
	14 30	0030	0.009	
	14 30	0050	0.008	
	14 30	0075	0.017	
	14 30	0100	0.019	
	14 30	0128	0.019	
73/09/11	16 25	0000	0.022	4.0
	16 25	0025	0.022	
	16 25	0038	0.023	
	16 25	0050	0.021	
	16 25	0075	0.021	
	16 25	0100	0.023	
	16 25	0125	0.027	
	16 25	0143	0.041	
73/11/09	13 25	0000	0.009	1.2
	13 25	0010	0.014	
	13 25	0025	0.011	
	13 25	0060	0.009	
	13 25	0030	0.019	
	13 25	0125	0.122	

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STORET RETRIEVAL DATE 74/11/26

131005
34 13 52.0 084 01 33.0
LAKE SIDNEY LANIER
13117 GEORGIA

11EPALES 2111202
3 0091 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/29	16	0000	28.2		108	50K	8.40	10K	0.080	0.400	0.060	0.003
	16	0006	28.2	8.7		50K	8.80	10K	0.060	0.200K	0.060	0.002K
	16	0015	28.1	8.7		50K	8.90	10K	0.050	0.200	0.050	0.002
	16	0030	18.8	6.1		50K	8.60	10K	0.080	0.200	0.240	0.004
	16	0060	13.4	5.1		50K	6.40	10K	0.060	0.200K	0.380	0.002K
	16	0087	10.4	1.0		50K	6.30	12	0.210	0.500	0.340	0.002K
73/09/11	15	0000	28.7	6.2	120	33	6.60	12	0.050	0.400	0.030	0.006
	15	0015	28.2	6.6		32	6.30	11	0.020	0.200	0.020	0.003
	15	0030	26.2	3.6		31	6.00	12	0.020	0.300	0.040	0.003
	15	0045	20.0	0.1		29	5.80	11	0.090	0.200	0.190	0.002
	15	0060	17.1	0.1		31	5.80	11	0.080	0.300	0.270	0.002
	15	0075	14.1	0.1		33	5.80	12	0.160	0.400	0.200	0.002K
	15	0087	12.3	0.0		67	6.20	18	0.860	1.300	0.040	0.002K
73/11/09	16	0000	17.9		144	27	6.10	13	0.070	0.600	0.040	0.017
	16	0010	17.9	7.6		27	6.00	15	0.060	0.200	0.030	0.013
	16	0025	17.9	7.6		26	6.10	15	0.060	0.300	0.030	0.013
	16	0050	18.0	7.4		28	6.10	16	0.090	0.300	0.030	0.012
	16	0080	16.0	0.0		67	6.20	30	0.940	1.200	0.020	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131005
34 13 52.0 084 01 33.0
LAKE SIDNEY LANIER
13117 GEORGIA

11EPALES 2111202
3 0091 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/29	16 00	0000	0.008	6.9
	16 00	0006	0.008	
	16 00	0015	0.009	
	16 00	0030	0.009	
	16 00	0060	0.010	
	16 00	0087	0.022	
73/09/11	15 00	0000	0.024	4.6
	15 00	0015	0.024	
	15 00	0030	0.024	
	15 00	0045	0.026	
	15 00	0060	0.023	
	15 00	0075	0.027	
	15 00	0087	0.025	
73/11/04	16 05	0000	0.010	1.9
	16 05	0010	0.011	
	16 05	0025	0.010	
	16 05	0050	0.010	
	16 05	0080	0.080	

STORET RETRIEVAL DATE 74/11/26

131006
34 13 21.0 083 58 04.0
LAKE SIDNEY LANIER
13117 GEORGIA

11EPALES
3

2111202
0115 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/05/29	16 35	0000	27.5		108	50K	7.60	10K	0.060	0.200	0.060	0.002K
	16 35	0006	27.5	8.6		50K	8.80	10K	0.050	0.200	0.050	0.002K
	16 35	0015	27.5	8.8		50K	9.00	10K	0.060	0.200	0.070	0.002
	16 35	0030	19.7	4.9		50K	6.40	10K	0.060	0.200K	0.340	0.003
	16 35	0060	13.4	5.9		50K	6.40	10K	0.050	0.200K	0.360	0.002
	16 35	0090	9.8	5.4		50K	6.30	10K	0.060	0.200K	0.440	0.003
	16 35	0111	8.1	2.9		50K	6.20	10K	0.060	0.200	0.480	0.002K
73/09/11	13 55	0000	28.4	3.0	124	31	7.00	15	0.050	0.500	0.030	0.004
	13 55	0015		7.0			6.60	14	0.040	0.200	0.030	0.003
	13 55	0025	27.0	4.8		33	6.30	15	0.040	0.200	0.030	0.004
	13 55	0035	22.0	0.1		27	5.80	14	0.040	0.200	0.130	0.004
	13 55	0045	19.7	0.4		28	5.70	13	0.050	0.200K	0.250	0.009
	13 55	0065	16.1	1.6		26	5.70	11	0.040	0.200	0.360	0.006
	13 55	0085	12.1			25						
	13 55	0111	10.1	0.1		30	5.90	18	0.370	0.700	0.030	0.010
73/11/09	16 30	0000	18.1		144	25	6.20	15	0.060	0.300	0.020	0.013
	16 30	0010	18.1	7.6		26	6.20	12	0.070	0.600	0.020	0.013
	16 30	0025	18.1	7.6		24	6.20	10	0.050	0.200K	0.020	0.013
	16 30	0050	18.1	6.2		25	6.10	10	0.060	0.200	0.020	0.012
	16 30	0075	16.8	0.6		29	5.90	11	0.150	0.300	0.020	0.012
	16 30	0095	13.6	0.0		37	6.10	17	0.490	0.900	0.010	0.003
	16 30	0120	11.3	0.0		58	6.20	22	0.940	1.200	0.020	0.007

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131006
34 13 21.0 083 58 04.0
LAKE SIDNEY LANIER
13117 GEORGIA

11FPALES 2111202
3 0115 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/29	16 35	0000	0.007	5.6
	16 35	0005	0.007	
	16 35	0015	0.007	
	16 35	0030	0.011	
	16 35	0060	0.009	
	16 35	0090	0.013	
	16 35	0111	0.010	
73/09/11	13 55	0000	0.010	4.4
	13 55	0015	0.011	
	13 55	0025	0.011	
	13 55	0035	0.024	
	13 55	0045	0.011	
	13 55	0065	0.012	
	13 55	0111	0.037	
73/11/29	16 30	0000	0.014	2.1
	16 30	0010	0.013	
	16 30	0025	0.011	
	16 30	0050	0.013	
	16 30	0075	0.014	
	16 30	0095	0.028	
	16 30	0120	0.020	

STORET RETRIEVAL DATE 74/11/26

131007
34 15 57.0 083 54 41.0
LAKE SIDNEY LANIER
13139 GEORGIA

11FPALES
3

2111202
0075 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	09 50	0000	28.1		108	50K	9.10	15	0.110	0.900	0.080	0.006
	09 50	0006	28.1	9.3		50K	8.60	15	0.120	0.400	0.080	0.010
	09 50	0015	28.0	8.7		50K	8.10	14	0.160	0.500	0.130	0.027
	09 50	0030	19.8	1.6		50K	6.40	14	0.280	0.300	0.380	0.040
	09 50	0050	15.4	1.8		50K	6.30	13	0.120	0.400	0.520	0.026
	09 50	0071	11.7	0.8		50K	6.30	18	0.460	0.800	0.270	0.007
73/09/11	13 10	0000	28.6	5.6	60	42	9.10	14	0.080	0.800	0.030	0.007
	13 10	0015	27.4	4.9		41	7.30	13	0.060	0.600	0.070	0.021
	13 10	0025	26.7			80						
	13 10	0035	21.7	0.1		34	6.60	16	0.250	0.400	0.020	0.032
	13 10	0045	19.5			37						
	13 10	0055	17.8	0.1		45	6.10	19	0.510	0.800	0.030	0.074
	13 10	0068	15.4	0.0		69	6.10	26	2.080	2.700	0.050	0.010
73/11/09	17 00	0000	18.3		84	37	6.30	10	0.090	0.400	0.390	0.054
	17 00	0010	18.3	6.4		40	6.20	10K	0.080	0.300	0.390	0.045
	17 00	0025	18.3	5.8		39	6.20	10K	0.210	0.300	0.410	0.067
	17 00	0050	18.3	4.2		48	6.20	16	0.870	1.400	0.540	0.172
	17 00	0065	18.1	1.4		66	6.20	17	1.340	1.700	0.480	0.157

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131007
34 15 57.0 083 54 41.0
LAKE SIDNEY LANIER
13139 GEORGIA

11FPALES 2111202
3 0075 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/30	09 50 0000		0.037	9.4
	09 50 0006		0.034	
	09 50 0015		0.046	
	09 50 0030		0.058	
	09 50 0050		0.126	
	09 50 0071		0.115	
73/09/11	13 10 0000		0.046	12.2
	13 10 0015		0.047	
	13 10 0035		0.073	
	13 10 0055		0.171	
	13 10 0068		0.065	
73/11/09	17 00 0000		0.081	10.7
	17 00 0010		0.073	
	17 00 0025		0.092	
	17 00 0050		0.241	
	17 00 0065		0.241	

STORET RETRIEVAL DATE 74/11/26

13100K
34 18 41.0 083 56 56.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES
3

2111202
0098 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	10 50	0000	27.5		96	50K	8.40	14	0.090	0.500	0.070	0.002
	10 50	0006	27.5	8.6		50K	8.50	15	0.080	0.400	0.060	0.002
	10 50	0015	27.4	9.1		50K	7.50	13	0.080	0.500	0.080	0.002
	10 50	0030	20.2	5.6		50K	6.50	14	0.120	0.200	0.260	0.004
	10 50	0050	16.5	4.6		50K	6.20	12	0.090	0.200K	0.360	0.005
	10 50	0070	11.0	2.0		50K	6.30	13	0.100	0.200K	0.410	0.003
	10 50	0094	9.7	0.8		50K	6.30	19	0.290	0.500	0.260	0.002
73/09/11	11 30	0000	28.4	7.4	74	31	7.00	10K	0.070	0.600	0.030	0.004
	11 30	0015	28.3	7.8		32	6.40	10K	0.040	0.400	0.030	0.004
	11 30	0030	24.4	2.2		30	6.00	10	0.040	0.300	0.100	0.005
	11 30	0054	18.2	0.1		26	5.80	10K	0.050	0.300	0.210	0.002
	11 30	0073	14.7	0.6		36	6.00	13	0.260	0.600	0.030	0.002K
	11 30	0078	13.6			57						
	11 30	0094	12.0	0.0		80	6.20	20	1.280	1.800	0.030	0.002K
73/11/10	16 30	0015			76			11	0.070	0.200K	0.040	0.013
	16 33	0000	17.4			24	6.60	10	0.080	0.600	0.050	0.007
	16 33	0005	17.4	7.4		24	6.50	10K	0.080	0.200K	0.040	0.013
	16 33	0015	17.3	7.0		25	6.60					
	16 33	0030	17.3	7.4		25	6.30	13	0.070	0.200K	0.040	0.016
	16 33	0060	17.2	7.4		25	6.50	13	0.070	0.200K	0.040	0.013
	16 33	0088	14.5	6.0		25	6.40	12	0.150	0.300	0.100	0.016

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/25

13100A
34 13 41.0 083 56 56.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 009A FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/05/30	10 50	0000	0.010	5.5
	10 50	0006	0.011	
	10 50	0015	0.015	
	10 50	0030	0.036	
	10 50	0050	0.036	
	10 50	0070	0.017	
	10 50	0094	0.029	
73/09/11	11 30	0000	0.014	5.0
	11 30	0015	0.012	
	11 30	0030	0.010	
	11 30	0054	0.013	
	11 30	0073	0.039	
	11 30	0094	0.035	
73/11/10	16 30	0015	0.015	
	16 33	0000	0.020	2.4
	16 33	0005	0.014	
	16 33	0030	0.050	
	16 33	0060	0.019	
	16 33	0088	0.069	

15

STORET RETRIEVAL DATE 74/11/26

131009
34 23 45.0 083 58 41.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0050 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	13 00	0000	27.2		72	50K	7.50	13	0.090	0.600	0.060	0.005
	13 00	0006	27.1	8.9		50K	7.50	14	0.090	0.600	0.060	0.004
	13 00	0015	23.5	6.7		50K	6.70	15	0.130	0.600	0.240	0.007
	13 00	0030	20.4	7.1		50K	6.70	13	0.110	0.400	0.230	0.004
	13 00	0046	17.1	1.4		50K	6.30	16	0.320	0.700	0.270	0.004
73/09/11	10 40	0000	28.4	7.8	82	32	8.10	10	0.040	0.400	0.030	0.004
	10 40	0013	27.0	6.0		30	6.90	10K	0.050	0.400	0.030	0.012
	10 40	0030	24.3	4.4		31	6.10	12	0.150	0.500	0.150	0.006
	10 40	0041	21.9			47						
	10 40	0046	19.2	0.0		114	6.40	30	1.600	2.100	0.030	0.004
73/11/10	16 09	0000	16.4		75	26	6.60	14	0.040	0.300	0.040	0.014
	16 09	0005	16.2	8.6		26	6.60	14	0.040	0.200K	0.040	0.014
	16 09	0015	16.0	8.4		26	6.60	12	0.040	0.200K	0.030	0.013
	16 09	0025	15.7	8.6		26	6.50	12	0.040	0.200K	0.040	0.014
	16 09	0039	13.5	9.0		25	6.50	12	0.070	0.200K	0.090	0.015

K = VALUE KNOWN TO BE LESS
THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131009
34 23 45.0 083 58 41.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0050 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/30	13 00	0000	0.016	5.6
	13 00	0006	0.015	
	13 00	0015	0.047	
	13 00	0030	0.056	
	13 00	0046	0.060	
73/09/11	10 40	0000	0.015	7.2
	10 40	0013	0.019	
	10 40	0030	0.032	
	10 40	0046	0.045	
73/11/13	16 09	0000	0.020	3.7
	16 09	0005	0.017	
	16 09	0015	0.015	
	16 09	0025	0.018	
	16 09	0039	0.050	

53

STORET RETRIEVAL DATE 74/11/26

131010
34 18 39.0 083 52 53.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES
3

2111202
0100 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	13 45	0000	27.7		96	50K	8.90	10	0.130	0.500	0.060	0.002
	13 45	0006	27.5	8.7		50K	8.70	11	0.120	0.600	0.070	0.004
	13 45	0015	27.4	8.3		50K	7.70	10	0.080	0.500	0.080	0.005
	13 45	0030	20.3	4.7		50K	6.40	12	0.160	0.500	0.260	0.007
	13 45	0050	16.7	3.4		50K	6.20	10	0.160	0.500	0.490	0.021
	13 45	0075	11.2	3.0		50K	6.30	19	0.110	0.400	0.620	0.018
	13 45	0096	9.5	0.9		50K	6.30	20	0.500	1.000	0.170	0.003
73/09/11	09 40	0000	28.4	7.6	96	32	6.60	10K	0.060	0.600	0.030	0.003
	09 40	0015	27.9	7.4		31	6.20	10K	0.040	0.200	0.020	0.004
	09 40	0030	24.0	3.0		29	5.80	10K	0.050	0.200K	0.150	0.005
	09 40	0045	20.3	0.1		31	6.00	10	0.130	0.300	0.070	0.005
	09 40	0070	14.7	0.1		37	5.80	10	0.290	0.600	0.230	0.009
	09 40	0097	11.4	0.0		75	6.30	15	1.470	1.900	0.040	0.004
73/11/10	16 59	0000	17.5		76	24	6.60	12	0.080	0.200	0.040	0.014
	16 59	0005	17.5	7.0		25	6.40	10K	0.090	0.200	0.040	0.014
	16 59	0015	17.5	7.6		25	6.60	10K	0.100	0.200	0.040	0.013
	16 59	0030	17.4	7.0		25	6.60	10K	0.090	0.200	0.040	0.013
	16 59	0060	17.1	7.0		25	6.50	10K	0.110	0.200	0.040	0.016
	16 59	0090	14.2	6.4		25	6.50	10K	0.130	0.300	0.100	0.017

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131019
34 1R 39.0 083 52 53.0
LAKE SIDNEY LANIER
13139 GEORGIA

11FPALES 2111202
3 0100 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/30	13 45	0000	0.011	5.7
	13 45	0006	0.012	
	13 45	0015	0.019	
	13 45	0030	0.021	
	13 45	0050	0.047	
	13 45	0075	0.040	
	13 45	0096	0.025	
73/09/11	09 40	0000	0.012	4.7
	09 40	0015	0.013	
	09 40	0030	0.015	
	09 40	0045	0.019	
	09 40	0070	0.040	
	09 40	0097	0.044	
73/11/10	16 59	0000	0.021	4.7
	16 59	0005	0.015	
	16 59	0015	0.015	
	16 59	0030	0.016	
	16 59	0050	0.022	
	16 59	0090	0.044	

STORET RETRIEVAL DATE 74/11/26

131011
34 20 40.0 083 50 49.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES
3

2111202
0089 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	14 45	0000	27.4		96	50K	8.30	10K	0.080	0.600	0.060	0.002
	14 45	0006	27.4	8.4		50K	8.10	10K	0.080	0.600	0.070	0.003
	14 45	0015	27.1	8.2		50K	6.60	11	0.130	0.600	0.250	0.004
	14 45	0030	21.1	5.4		50K	6.50	12	0.130	0.600	0.260	0.004
	14 45	0050	16.8	2.2		50K	6.30	15	0.140	0.600	0.580	0.006
	14 45	0070	11.8	0.2		50K	6.40	21	0.460	0.900	0.260	0.003
	14 45	0085	10.5	0.1		50K	6.40	23	0.550	1.100	0.110	0.002
73/09/10	16 20	0000	29.3	8.2	74	32	8.10	11	0.070	0.600	0.040	0.002K
	16 20	0015	27.6	6.8		30	7.00	11	0.020K	0.400	0.020	0.002K
	16 20	0030	23.9	3.2		28	6.20	12	0.040	0.300	0.140	0.002K
	16 20	0050	19.4	0.1		50	6.20	16	0.450	0.700	0.030	0.007
	16 20	0069	15.4	0.1		85	6.40	30	1.420	2.200	0.050	0.009
73/11/09	17 40	0000	17.9		75	28	6.40	11	0.090	0.200K	0.040	0.015
	17 40	0005	17.8	7.4		28	6.30	10K	0.090	0.200K	0.040	0.014
	17 40	0015	17.8	7.6		27	6.20	10K	0.090	0.200K	0.030	0.017
	17 40	0030	17.8	7.8		28	6.00	10K	0.090	0.200K	0.040	0.009
	17 40	0045	17.6	7.2		30	6.00	14	0.090	0.200K	0.040	0.015
	17 40	0060	15.1	7.2		25	5.90	15	0.080	0.200K	0.100	0.013
	17 40	0077	14.4	7.2		26	6.00	14	0.090	0.200K	0.110	0.016

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131011
34 20 40.0 083 50 49.0
LAKE SIDNEY LANIER
13139 GEORGIA

11FPALES 2111202
3 0089 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/05/30	14 45	0000	0.013	6.7
	14 45	0005	0.015	
	14 45	0015	0.022	
	14 45	0030	0.023	
	14 45	0050	0.031	
	14 45	0070	0.030	
	14 45	0085	0.016	
73/09/10	16 20	0000	0.014	8.8
	16 20	0015	0.014	
	16 20	0030	0.014	
	16 20	0050	0.031	
	16 20	0069	0.059	
73/11/09	17 40	0000	0.031	5.9
	17 40	0005	0.021	
	17 40	0015	0.025	
	17 40	0030	0.025	
	17 40	0045	0.022	
	17 40	0060	0.038	
	17 40	0077	0.057	

STORET RETRIEVAL DATE 74/11/26

131012
34 20 58.0 083 47 36.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0050 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/30	15	30 0000	27.7		84	50K	7.50	10K	0.110	0.600	0.080	0.008
	15	30 0006	27.5	8.2		50K	7.50	10K	0.090	0.500	0.060	0.002
	15	30 0015	24.7	7.4		50K	7.20	10K	0.090	0.300	0.100	0.004
	15	30 0030	21.7	6.4		50K	6.60	10	0.120	0.400	0.210	0.004
	15	30 0046	19.0	0.8		50K	6.30	15	0.400	0.600	0.190	0.004
73/09/10	17	10 0000	29.8	9.2	80	30	8.40	14	0.060	0.600	0.030	0.002
	17	10 0010	28.2	8.5		32	7.40	13	0.020K	0.600	0.020	0.002K
	17	10 0025	24.3	5.0		28	6.50	13	0.060	0.500	0.140	0.002
	17	10 0047	18.9	0.0		110	6.50	31	1.460	2.000	0.030	0.003
73/11/09	17	06 0000	16.9		69	27	6.20	11	0.060	0.500	0.040	0.014
	17	06 0005	16.9	9.0		27	6.20	10	0.050	0.200	0.040	0.016
	17	06 0015	16.9	8.6		27	6.20	10	0.050	0.200K	0.040	0.015
	17	06 0030	14.9	7.8		25	6.00	11	0.070	0.200K	0.100	0.016
	17	06 0040	14.5	7.6		25	6.00	10K	0.040	0.200K	0.110	0.015

K VALUE KNOWN TO BE LESS
THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

131012
34 20 58.0 083 47 36.0
LAKE SIDNEY LANIER
13139 GEORGIA

11EPALES 2111202
3 0050 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/30	15 30	0000	0.017	8.3
	15 30	0005	0.017	
	15 30	0015	0.020	
	15 30	0030	0.037	
	15 30	0045	0.073	
73/09/10	17 10	0000	0.015	17.9
	17 10	0010	0.016	
	17 10	0025	0.021	
	17 10	0047	0.034	
73/11/09	17 06	0000	0.025	6.4
	17 06	0005	0.021	
	17 06	0015	0.023	
	17 06	0030	0.032	
	17 06	0040	0.058	

APPENDIX E

TRIBUTARY and WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 78/01/07

1310A1 1310A1
34 09 30.0 084 04 30.0
CHATTAHOOCHEE
13 7.5 BUFORD DAM
O/LAKE SIDNEY LANIER
GAGING STATION AT END OF ECHOLS RD
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/01/10	09 45		0.154	2.100	0.077	0.006	0.010
73/04/14	10 15		0.220	0.880	0.280	0.006	0.010
73/05/12	14 37		0.250	1.100	0.050	0.005K	0.005K
73/06/20	17 30		0.340	0.140	0.029	0.005K	0.005K
73/07/15	09 30		0.394	0.400	0.044	0.007	0.010
73/08/03	16 30		0.410	0.140	0.037	0.005K	0.005K
73/09/15	14 20		0.210	0.290	0.176	0.006	0.010
73/10/14	09 00		0.150	0.400	0.250	0.010	0.010
73/11/10	11 00		0.063	0.500	0.276	0.005K	0.022
73/12/23	14 10		0.100	0.200	0.052	0.005K	0.005
74/01/14	13 30		0.420	0.100K	0.065	0.005	0.008
74/02/13	09 00		0.208	0.100K	0.020	0.005K	0.010
74/02/28	10 30		0.510	0.100	0.015	0.005K	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

1310A2 1310A2
34 25 00.0 083 42 30.0
CHATTAHOUCHEE RIVER
13 7.5 LULA
I/LAKE SIDNEY LANIER
LULA BRDG ON RT 52 NW OF LULA
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	13 35		0.200	1.150	0.120	0.012	0.030
73/04/14	12 50		0.180	1.700	0.270	0.011	0.035
73/05/12	16 35		0.189	0.580	0.052	0.009	0.060
73/06/20	19 50		0.460	0.250	0.049	0.013	0.035
73/07/14			0.176	0.205	0.029	0.019	0.040
73/08/03	18 00		0.260	0.320	0.035	0.019	0.080
73/09/15	15 55		0.330	1.100	0.480	0.030	0.140
73/10/14	13 15		0.160	0.400	0.036	0.011	0.060
73/11/10	11 30		0.115	0.200	0.046	0.014	0.030
73/12/23	16 05		0.160	0.100K	0.024	0.005K	0.025
74/01/19	16 00		0.176	0.120	0.120	0.010	0.020
74/02/14	10 45		0.200	0.200	0.065	0.010	0.030
74/02/28	14 40		0.288	0.100K	0.020	0.005	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/01/07

1310H1 1310H1
34 28 00.0 083 58 00.0
CHESTATEE RIVER
13 7.5 MURRAYVILLE
T/LAKE SIDNEY LANIER
BANK AT WASHED OUT BRDG OFF RT 60
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	15	33	0.189	0.690	0.250	0.008	0.025
73/04/14	13	40	0.176		0.120	0.006	0.050
73/05/12	18	15	0.154	0.440	0.087	0.008	0.025
73/05/20	21	40	0.460	1.850	0.147	0.150	0.430
73/07/14	13	30	0.138	0.110	0.024	0.006	0.015
73/08/03	13	30	0.210	0.230	0.018	0.010	0.060
73/09/18	10	05	0.180	0.190	0.033	0.009	0.060
73/10/13	16	40	0.094	0.200	0.027	0.015	0.015
73/12/23	18	00	0.152	0.100K	0.008	0.005K	0.010
74/01/14	18	25	0.184	0.100K	0.035	0.005K	0.015
74/02/14	13	05	0.200	0.100K	0.015	0.005	0.020
74/02/27	14	05	0.184	0.700	0.030	0.005	0.100

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

1310C1 1310C1
34 25 30.0 083 52 30.0
#AHOO CREEK
13 7.5 MURRAYVILLE
T/LAKE SIDNEY LANIER
#RDG ON #ELCHER RD E OF MURRAYVILLE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	15 07		0.440	1.150	0.052	0.013	0.035
73/04/14	15 00		0.380	1.320	0.050	0.024	0.045
73/05/12	17 55		0.410	0.880	0.050	0.038	0.095
73/07/14	13 40		0.450	0.240	0.024	0.039	0.060
73/08/03	13 45		0.520	0.340	0.034	0.078	0.170
73/09/18	09 45		0.378	0.300	0.024	0.052	0.140
73/10/13	15 10		0.310	0.350	0.054	0.040	0.095
73/11/10	09 40		0.210	0.100K	0.015	0.020	0.040
73/12/23	17 35		0.320	0.100K	0.016	0.012	0.027
74/01/19	18 00		0.504	0.100K	0.020	0.015	0.030
74/02/14	12 10		0.528	0.200	0.015	0.015	0.050
74/02/27	14 55		0.740	0.900	0.040	0.010	0.055

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

131001 131001
34 24 30.0 083 49 00.0
FORD LITTLE RIVER
13 7.5 CLERMONT
T/LAKE SIDNEY LANIER
BRDG ON NUPONE RD
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	14 30		0.640	1.680	0.16R	0.019	0.045
73/04/14	14 05		0.620	1.100	0.092	0.014	0.035
73/05/12	11 40		0.600	0.920	0.147	0.024	0.065
73/06/20	20 45		0.520	0.480	0.044	0.033	0.115
73/07/14	16 00		0.600	0.420	0.054	0.022	0.055
73/08/03	13 55		0.530	0.340	0.023	0.027	0.080
73/09/18	09 15		0.510	0.250	0.02R	0.024	0.070
73/10/13	15 50		0.480	0.175	0.024	0.022	0.055
73/11/10	10 00		0.370	0.600	0.017	0.016	0.030
73/12/23	17 10		0.590	0.100	0.016	0.012	0.030
74/01/14	17 10		0.750	0.100K	0.025	0.015	0.030
74/02/14	11 35		0.756	0.200	0.020	0.015	0.035
74/02/27	15 30		0.500	0.100	0.015	0.015	0.070

R VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

1310E1
34 23 40.0 083 49 03.0
E FORD LITTLE RIVER
13 7.5 CLERMONT
T/LAKE SIDNEY LANIER
HRDG ON HONEYSUCKLE RD
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	14 15		0.610	1.600	0.088	0.012	0.030
73/04/14	13 45		0.660	2.100	0.075	0.011	0.042
73/05/12	17 15		0.560	1.540	0.220	0.015	0.060
73/06/20	20 30		0.730	0.360	0.100	0.048	0.185
73/08/03	14 45		0.540	0.500	0.046	0.018	0.080
73/09/15	16 20		0.520	0.540	0.220	0.031	0.140
73/10/13	16 00		0.460	0.490	0.154	0.015	0.045
73/11/10	10 15		0.340	0.150	0.013	0.007	0.025
73/12/23	16 55		0.552	0.300	0.020	0.005K	0.020
74/01/19	17 00		0.710	0.100K	0.015	0.010	0.020
74/02/14	11 20		0.740	0.200	0.015	0.005	0.025
74/02/27	16 00		0.730	0.600	0.025	0.010	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

1310F1 1310F1
34 16 00.0 083 53 00.0
FLAT CREEK
13 7.5 CHESTATEE
T/LAKE SIDNEY LANIER
FIRST HWY BRDG ABOVE MOUTH
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	10 45		0.900	5.000	2.600	0.510	0.760
73/04/14	11 33		1.060	5.200	2.600	0.750	1.100
73/05/12	13 35		0.610	4.200	1.900	1.900	2.200
73/06/20	17 00		0.940	12.600	10.800	2.500	2.630
73/07/15	10 00		0.231	8.700	4.700	0.520	1.000
73/08/03	15 45		2.160	10.500		2.300	2.800
73/09/15	13 50		1.160	2.700	1.100	0.660	1.050
73/10/14	08 45		3.000	5.600	2.200		2.300
73/11/10	15 45		0.340	8.750	6.200	0.630	1.200
73/12/23	15 15		0.770	3.400	0.930	0.352	1.050
74/01/19	14 40		0.336	23.000		1.600	3.300
74/02/14	09 45		0.460	19.000		2.000	3.250
74/02/28	11 20		2.100	11.500	3.300	2.750	4.400

STORET RETRIEVAL DATE 76/01/07

1310G1 1310G1
34 20 00.0 083 48 00.0
LIMESTONE CREEK
13 7.5 GRAINSVILLE
T/LAKE SIDNEY LANIER
HWY BRDG .2 MI E JCT WITH RT 284
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	11 10		0.273	2.700	0.105	0.076	0.300
73/04/14	12 15		0.310		0.070	0.025	0.085
73/05/12	16 00		0.210	1.050	0.056	0.016	0.070
73/06/20	19 00		0.011	0.330	0.021	0.005K	0.030
73/07/14	16 00		0.044	0.400	0.013	0.010	0.055
73/08/03	18 40		0.010K	0.420	0.033	0.009	0.060
73/09/15	15 25		0.038	0.120	0.027	0.008	0.045
73/10/13	11 10		0.010K	0.600	0.021	0.012	0.060
73/11/10	11 55		0.140	0.450	0.084	0.038	0.103
73/12/23	15 35		0.950	0.600	0.116	0.200	0.260
74/01/19	15 05		0.890	0.110	0.110	0.170	0.290
74/02/14	10 15		0.920	0.500	0.145	0.170	0.325
74/02/28	14 15		1.010	0.600	0.105	0.220	0.375

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

1310M1 1310M1
34 25 30.0 083 44 00.0
FLAT CREEK
13 7.5 LULA
T/LAKE SIDNEY LANIER
BRDG ON FARM RD NE OF GLADE LAKE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	14 00		0.370	1.690	0.147	0.037	0.065
73/04/14	13 10		0.336		0.064	0.014	0.030
73/05/12	16 49		0.300	0.630	0.068	0.015	0.050
73/06/20	20 10		0.620	0.225	0.037	0.009	0.035
73/07/14	15 39		0.380	0.180	0.015	0.019	0.035
73/08/03	17 00		0.350	0.300	0.032	0.028	0.050
73/09/15	14 05		0.300	0.310	0.260	0.026	0.075
73/10/14	11 30		0.400	0.300	0.056	0.024	0.039
73/11/10	10 55		0.240	0.250	0.034	0.018	0.030
73/12/23	16 20		0.400	0.200	0.048	0.020	0.022
74/01/19	16 15		0.144	0.100	0.010	0.005K	0.035
74/02/14	11 00		0.460	0.200	0.065	0.035	0.035
74/02/28	15 00		0.420	0.100	0.040	0.015	0.030

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/01/07

131OJ1 131OJ1
34 15 00.0 084 00 30.0
FOUR MILE CREEK
13 7.5 BUFORD DAM
T/LAKE SIDNEY LANIER
FOUR MILE CREEK BRDG ON RT 369
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/10	10	19	0.730	1.760	0.560	0.021	0.050
73/04/14	11	15	0.660	1.540	0.072	0.009	0.020
73/05/12	13	37	0.460	2.100	0.083	0.020	0.070
73/07/15	09	00	0.066	0.370	0.048	0.016	0.035
73/08/03	15	10	0.019	0.420	0.037	0.009	0.045
73/09/15	14	55	0.580	0.450	0.059	0.018	0.060
73/10/14	10	00	0.650	0.250	0.056	0.012	0.040
73/11/10	15	00	0.540	0.200	0.039	0.006	0.030
73/12/23	14	40	0.680	0.100K	0.030	0.008	0.015
74/01/14	14	15	0.770	1.200	0.045	0.015	0.025
74/02/13	09	30	0.780	0.200	0.040	0.010	0.060
74/02/28	11	00	0.742	0.200	0.035	0.015	0.170

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 75/01/06

1310HA TF1310HA P018000
34 15 50.0 083 52 00.0
GAINESVILLE FLAT CREEK PLANT
13 7.5 GAINESVILLE
T/LAKE SIDNEY LANIER
FLAT CREEK
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/10	00	00							
CP(T)-			0.840	24.000	11.400	5.500	7.400	3.690	3.400
73/04/11	24	00							
73/05/07	00	00							
CP(T)-			14.400	6.300	2.600	7.900	8.200	3.000	3.200
73/05/07	24	00							
73/06/12	00	00							
CP(T)-			13.000	4.500	0.392	6.200	6.900	2.800	3.300
73/06/12	24	00							
73/07/25	00	00							
CP(T)-			0.880	11.800	4.400	3.780	4.200	4.330	3.400
73/07/25	24	00							
73/08/22	00	00							
CP(T)-				15.800	7.600	5.800	6.600	4.300	3.800
73/08/22	24	00							
73/09/19	00	00							
CP(T)-			0.069	22.000	20.000	5.940	7.100	4.200	3.800
73/09/19	24	00							
73/10/16	00	00							
CP(T)-			0.105	18.500	8.350	6.800	7.500	3.800	3.700
73/10/16	24	00							
73/11/07	00	00							
CP(T)-			0.159	20.300	8.700	4.900	6.100	4.360	4.100
73/11/07	24	00							
73/12/04	00	00							
CP(T)-			0.330	20.000	8.800	6.400	6.900	6.340	3.710
73/12/04	24	00							
74/01/29	00	00							
CP(T)-			0.840	18.000	6.900	3.200	4.200	5.200	3.600
74/01/29	24	00							
74/02/18	00	00							
CP(T)-			8.000	12.000	5.750	5.300	6.200	3.640	3.400
74/02/18	24	00							
74/03/13	00	00							
CP(T)-			0.640	32.000	6.900	4.100	4.900	4.390	3.400
74/03/13	24	00							

STORET RETRIEVAL DATE 75/01/06

131021 TF131021 P004000*
34 19 40.0 083 51 00.0
GAINESVILLE-LINWOOD PLANT
13139 7.5 GAINESVILLE
D/LAKE SIDNEY LANIER
LAKE SIDNEY LANIER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50050 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/10	00	00							
CP(T)-			0.680	23.100	10.500	6.000	7.700	2.240	1.800
73/04/11	24	00							
73/05/07	00	00							
CP(T)-			1.500	22.000	10.000	9.300	9.400	1.600	1.800
73/05/07	24	00							
73/06/12	00	00							
CP(T)-			0.065	4.300	1.740	1.460	8.500	1.700	1.800
73/06/12	24	00							
73/07/25	00	00							
CP(T)-			0.990	15.400	6.600	2.900	8.640	2.400	1.800
73/07/25	24	00							
73/08/28	00	00							
CP(T)-				14.600	6.700	8.000	9.500	1.940	1.970
73/08/28	24	00							
73/09/19	00	00							
CP(T)-			3.200	10.400	5.560	7.260	8.800	1.920	1.800
73/09/19	24	00							
73/10/16	00	00							
CP(T)-			0.011	22.000	8.500	8.500	9.450	1.830	1.700
73/10/16	24	00							
73/11/07	00	00							
CP(T)-			0.300	25.500	12.000	8.200	9.850	1.670	1.500
73/11/07	24	00							
73/12/04	00	00							
CP(T)-			1.100	25.100	10.400	7.900	9.300	2.200	1.500
73/12/04	24	00							
74/01/24	00	00							
CP(T)-			0.320	16.000	7.400	5.700	8.500	2.040	1.760
74/01/29	24	00							
74/02/18	00	00							
CP(T)-			1.040	8.300	6.600	8.600	9.500	1.780	1.600
74/02/18	24	00							
74/03/13	00	00							
CP(T)-			1.440	19.000	7.000	5.300	8.100	1.780	1.500
74/03/13	24	00							

72

STORET RETRIEVAL DATE 75/01/06

131031 TF131031 P002400*
34 31 00.0 083 31 30.0
CORNELIA
13 1:250000 GREENVI
1/LAKE SIDNEY LANIER
MUD CREEK/CHATTAHOOCHEE RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/17	08	00							
CP(T)-			0.450	20.000	8.100	3.400	4.700	2.500	2.500
73/04/17	17	00							
73/05/15	00	00							
CP(T)-			0.220	21.000	7.600	3.600	4.700	2.500	2.500
73/05/15	08	00							
73/06/19	00	00							
CP(T)-			0.140	18.900	9.800	4.100	4.700	2.500	2.500
73/06/19	08	00							
73/07/17	08	00							
CP(T)-			0.036	28.300	12.500	4.650	5.600	2.500	2.500
73/07/17	17	00							
73/08/14	08	00							
CP(T)-			0.168	18.000	7.600	4.000		2.500	2.500
73/08/14	16	30							
73/09/18	08	30							
CP(T)-			0.440	15.800	7.050	4.000	5.300	2.500	2.500
73/09/18	16	30							
73/10/11	09	30							
CP(T)-			0.040	15.000	9.100	3.800	4.300	2.500	2.500
73/10/11	17	00							
73/11/14	08	00							
CP(T)-			1.150	20.000	10.600	3.780	4.800	2.500	2.500
73/11/14	17	00							
73/12/19	08	30							
CP(T)-			1.940	17.500	7.200	3.500	5.000	2.500	2.500
73/12/19	16	30							
74/01/18	09	00							
CP(T)-			0.160	23.000	13.200	3.520	5.000	2.500	2.500
74/01/18	16	30							
74/02/19	09	30							
CP(T)-			0.320	18.000	7.300	2.500	4.100	2.500	2.500
74/02/19	17	00							
74/03/13	09	00							
CP(T)-			1.160	8.600	5.400	3.300	4.000	2.500	2.500
74/03/13	16	30							

START RETRIEVAL DATE 74/04/18

131031 TF131031 P002400*
34 41 00.0 083 31 30.0
COMMELIA
13 1:250000 GWEENVI
T/LAKE SIDNEY LANIER
MUD CREEK/CHATTAHOOCHEE RIVER
11FALES 2141204
4 0000 FEET DEPTH

DATE TIME DEPTH		00631 NITRATE	00625 TOT KJEL	00610 NH3-N	00671 PHOS-DIS	00665 PHOS-TOT	50051 FLOW	50053 CONDUIT
FROM OF		N-TOTAL	N	TOTAL	ORTHO		RATE	FLOW-MGD
TO DAY FEET		MG/L	MG/L	MG/L	MG/L P	MG/L P	INST MGD	MONTHLY
74/04/17 09 00								
CP(T)-		11.00	6.20	5.000	3.100	4.700	2.500	2.500
74/04/17 17 01								

1 31041 T 1 31041 P001300
34 37 30.0 083 31 00.0
CLARKESVILLE
13 7.5 CLARKESVILLE
1/LAKE SIDNEY LANIER
5 2 0 0 RIVER/CHATTAHOOCHEE RIVER
11 2/LES 2141204
4 0000 FEET DEPTH

							00665	50051	50053
DATE	TIME						PHOS-TOT	FLOW	CONDUIT
FROM	OF				TOTAL			RATE	FLOW-MGD
TO	DAY	CODE	MG/L	MG/L	MG/L	MG/L P	MG/L P	INST MGD	MONTHLY
74/12/13	11	00	10.300	0.052	0.040	0.400	10.300		
74/12/13	11	50	5.230	2.350	1.000	0.000	0.700		